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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,182	12/22/2005	Patrick Pan	117393-002	4144
29177 7590 07/10/2008 BELL, BOYD & LLOYD, LLP P.O. BOX 1135 CHICAGO, IL 60690				
EXAMINER LE, HOANGANH T				
ART UNIT 2821		PAPER NUMBER		
NOTIFICATION DATE 07/10/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENTS@BELLBOYD.COM

### Office Action Summary

**Application No.**

10/562,182

**Applicant(s)**

PAN ET AL.

**Examiner**

Hoang Anh T. Le

**Art Unit**

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 9-13, 18 and 19 is/are rejected.  
7) ☒ Claim(s) 14-17 and 20-22 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The amendment filed on April 30, 2008 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 9,12,13,18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kadambi et al (the US 2004/0056804).

Regarding claim 9, the Kadambi et al reference teaches in figure 2 a PIFA antenna arrangement for at least two mobile radio frequency bands having a desired separation from one another comprising: a first antenna branch 14,15,16 having a turning point between a first end and a second end of the first antenna branch; a second antenna branch 12,13 being alongside the first antenna branch and having a first gap with the first antenna branch, wherein the second antenna branch is in the form of a strip and connected the first end of the first antenna branch to form a series connection (figure 2), a ground connection 32, arranged at an outer edge of the first antenna branch 16 facing away from the first gap; and an RF supply connection 22 is arranged at the outer edge of the second end of the first antenna branch where the ground

connection is provided; wherein the widths of the first antenna branch and the second antenna branch, the lengths of the first antenna branch and the second antenna branch, and the gap between the first antenna branch and the second antenna branch are of such a size that the PIFA antenna structure has two resonant frequency bands that conform to the desired separation (figure 2).

Regarding claim 12, wherein a distance between the ground connection and the RF supply connection is matched to a resonant frequency of one of the two resonant frequency bands (figure 2).

Regarding claim 13, wherein the area ratio of the first antenna branch and the second antenna branch corresponds to a ratio between two resonant frequencies (figure 2).

Regarding claim 18, the Kadambi et al reference teaches in figure 4B a PIFA antenna comprising: a first antenna branch having an L-shape; a second antenna branch having an L-shape, the second antenna branch being alongside the first antenna branch, and the second antenna branch having a first gap 53 with the first antenna branch, wherein the second antenna branch is connected at a first end of the first antenna branch to form a series connection; a ground connection 71; and an RF supply connection 59, wherein the ground connection and the RF supply connection are arranged at an outer edge of the first antenna branch 52 facing away from the first gap 53.

Regarding claim 19, wherein an inherent distance between the ground connection and the RF supply connection is matched to a resonant frequency of the antenna (figure 4B).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadambi et al (cited above).

Regarding claims 10 and 11, the Kadambi et al reference teaches every feature of the claimed invention, excluding the width of at least one of the antenna branches being less than 1/15 of the wavelength of a higher-frequency frequency band or the width of at least one of the antenna branches being less than 1/20 of the wavelength of the higher-frequency frequency band.

It would have been an obvious matter of design choice to have the width of at least one of the antenna branches being less than 1/15 of the wavelength of a higher-frequency frequency band or the width of at least one of the antenna branches being less than 1/20 of the wavelength of the higher-frequency frequency band because the width of the antenna depends on the operating frequency.

***Allowable Subject Matter***

6. Claims 14-17 and 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is an examiner's statement of reasons for allowance: none of the cited art discloses a third antenna branch and a fourth antenna branch being alongside the third antenna branch, wherein the fourth antenna branch is in the form of a strip and the third antenna branch and the fourth antenna branch are connected in series at the first end of the third antenna branch, the fourth antenna branch having a second gap with the third antenna branch, wherein the first antenna branch connects the third antenna branch at the ground connection.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

8. Applicant's arguments with respect to claims 9-13 and 18-19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2821

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HoangAnh T Le/  
Primary Examiner, Art Unit 2821